

fab lab sponges

by Paul Wisotzky

Use graphic-design software, a laser cutter/engraver, and a polyurethane sponge to produce incredibly precise and intricate sponge stamps to apply glazes, slips, and wax resist.

I've been using sponge stamps as a surface decorating tool for many years. I've created them using a razor knife to cut the sponge or a soldering iron to melt away the negative space to create the design. While these methods work, the resulting stamps don't create the crisp lines, shapes, and graphic patterns I've been striving for, nor can multiple stamps with the exact same design be reproduced. The process I've developed using a laser cutter produces the best results by far, yielding incredibly precise and intricate sponge stamps to apply glaze, slips, and wax resist.

An Introduction to Digital Fabrication

I was introduced to the laser cutter and other digital fabrication tools at the Haystack Mountain School of Crafts in Deer Isle, Maine, in their fab lab. Fab labs are small-scale digital fabrication facilities, and Haystack is the only craft school that is part of a network of more than 1700 fab labs around the globe (www.fabfoundation.org).

This year I was awarded an open studio residency at Haystack where I developed the process of creating sponge stamps using a laser cutter. The process is involved, sometimes challenging, and not for everyone, but it is one example of how to integrate digital technology and fabrication into your current, conventional making practices.

First, you need the facilities and equipment for the task. While polyurethane sponge is approved for use in most laser cutters, regardless of approach, you will need to account for the gases and fumes produced when cutting the material. Machines must be properly ventilated. Home and hobbyist laser cutters and engravers are starting to become more widely available, but they

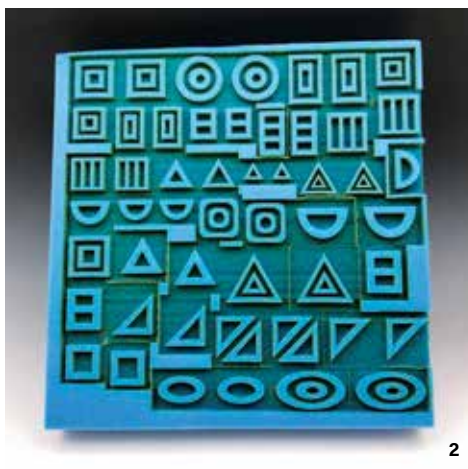
are not inexpensive. Always check with the manufacturer to make sure polyurethane sponge or foam is an approved material for the machine and that it can be properly ventilated. Laser cutters are also appearing in many community-based maker spaces and educational institutions. These spaces often limit the kinds of materials you can use, so check first to see if polyurethane sponge is allowed to be used. There are also companies that provide laser cutting and engraving services. You provide your design and material, and they do the cutting. Be specific with them about what you want to do, the material you will use, and the exact results you are looking for before you engage their services.

Creating the Designs

You'll design your stamps on a computer or tablet in a graphic design program such as Adobe Illustrator or Corel Draw. Just like a word-processing program where you can edit, draft, cut, paste, and copy easily, the design software also gives you these abilities. You can experiment with shapes and patterns, preview them, and explore combining them within the design program before you begin to cut the stamps. This method also allows for you to scale up or down easily and produce multiple stamps with the same exact design.

Most likely you will produce many stamps on one piece of material. The stamps that I've found work best are no more than 2 inches wide or tall, so I group many designs in one file. Create a canvas in the software that is the same size as the material and create at least a ¼-inch border on the canvas to contain the design.

Choose a polyurethane sponge that has very fine pores and is at least 1½ inch thick. The yellow, brick-shaped sponges that most of



1 The laser cutter in action cutting a 12×12-inch block of sponge. Prior to cutting you will determine the best power and speed of the laser. Always test and determine settings for each machine before cutting. **2** Laser-cut block of Aquazone sponge. This block of sponge will be cut apart into 51 individual stamps. **3** Cut out the individual stamps using an electric serrated kitchen knife.

us use in our studios work fairly well. The material I have found that works even better is an industrial sponge called Aquazone (I purchase mine from www.mcmaster.com), which is used to make sponge mops. Make sure the cutting bed of the machine can accommodate whatever size material you choose.

Laser cutters/engravers perform two basic functions—vector cutting and raster engraving. To produce the stamps, use the raster engraving function. This cuts away material, leaving the raised portion of the stamp. You will want to cut out between $\frac{1}{4}$ – $\frac{3}{8}$ inch of material and keep the thickness of the raised portion of your stamp to $\frac{1}{4}$ – $\frac{1}{2}$ inch. In your design, designate a color for the raster engraving areas and a color for the areas that will remain uncut.

Whether you run the machine yourself or have someone else do it, laser power and speed settings will need to be determined for each machine and material. Have an extra piece of sponge that you can do a couple of test runs on to determine the correct settings before you make your final cuts. A 12×12-inch square of sponge will take approximately 20–25 minutes to cut, depending on the intricacy of the design and the number of individual stamps. Never leave the machine unattended while cutting. When finished, cut apart each individual stamp using an electric knife.

When using your sponges with wax resist, wash out the sponge with warm water and a dot of dishwashing liquid until the water runs clear as soon as possible after use. This will remove the wax resist from the sponge as long as you rinse thoroughly. Do not let the wax set up in the sponge. This practice will greatly extend the life of the sponge.

the author *Paul Wisotzky is a studio potter and teacher based in Truro, Massachusetts. He makes pots at his studio Blueberry Lane Pottery for everyday use out of porcelain and stoneware. He fires in reduction and soda atmospheres. Paul has been an open studio resident at Haystack Mountain School of Crafts and a winter resident at Penland School of Crafts. To learn more, visit www.blueberrylanepottery.com.*

4 Examples of stamps cut on yellow brick sponge, which are available in most hardware stores. Each sponge yields multiple stamps. **5** Examples of individual stamps made from both the blue Aquazone sponge as well as readily available yellow brick sponges. **6** Pitcher, 11 in. (28 cm) in height, stoneware, layered glaze pattern created with multiple sponge stamps, fired to cone 10 in reduction.

